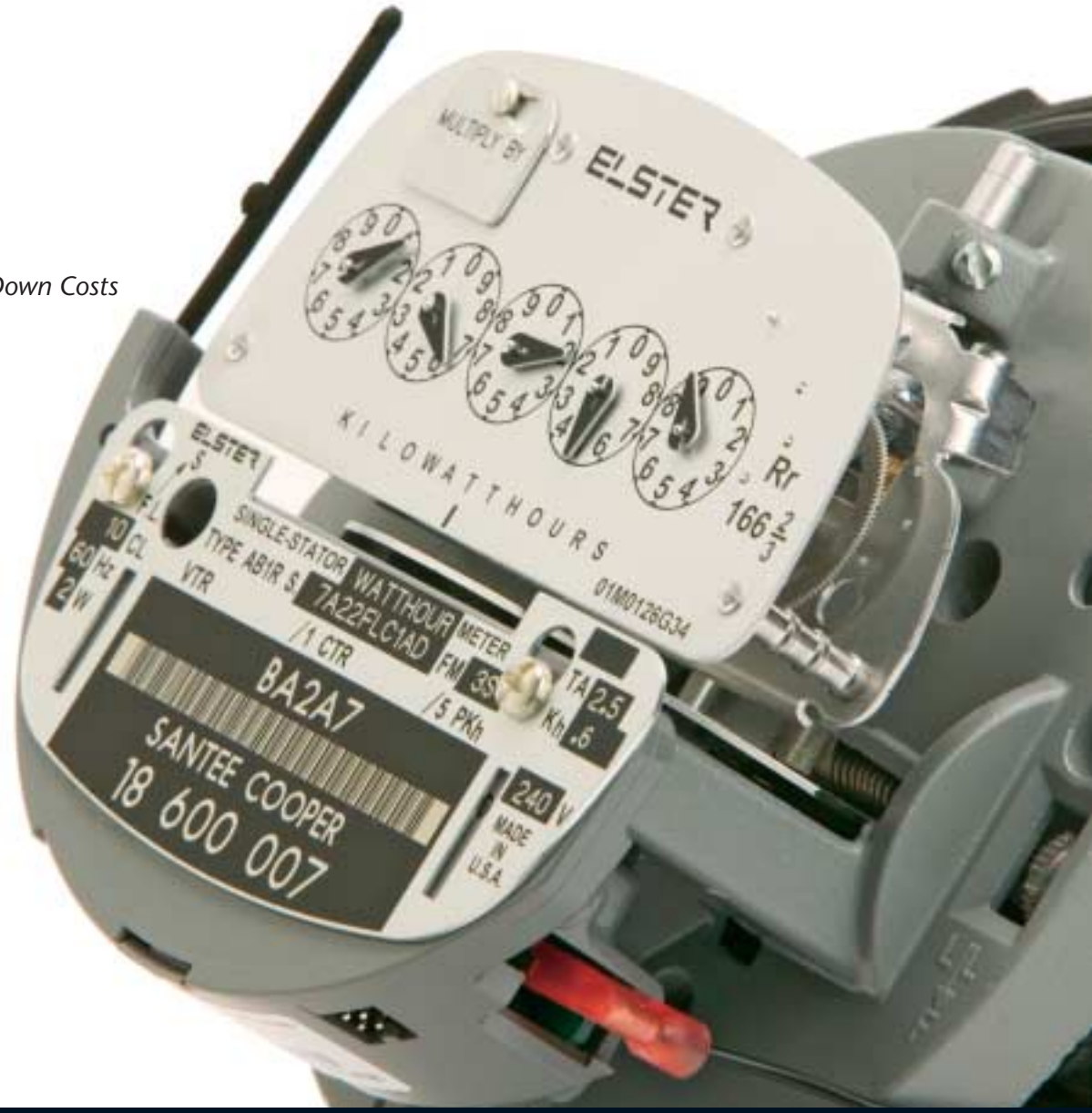
A Corporate Publication of Santee Cooper

PowerSource®

SPRING 2005

Modern-Day Meter Reading—
Helping Improve Service and Hold Down Costs



Anderson — the "Electric City" | Transmission Rights of Way — More than Pathways for Power | Robert M. Cooper — Renaissance Man

Providing Value to State Continues as Prime Santee Cooper Commitment

The history of Santee Cooper is inherent with an appreciation for the geography, economic climate and historical development of South Carolina that played a major role in setting the stage for the development of a public power utility. The earliest example of providing value to the state occurred with the Santee Canal, constructed from 1793 to 1800 for the purpose of improving commerce through river traffic and subsequently improving the quality of life for the people of South Carolina.

The 22-mile hand-dug canal connected the Santee and Cooper rivers, allowing the flow of commerce from the Midlands and Piedmont sections of South Carolina to the port of Charleston. This private venture was a precursor to the Santee Cooper Hydroelectric and Navigation Project, which was constructed in the late 1930s and began operation in 1942.

Since the first power was delivered in 1942, Santee Cooper has been fulfilling its commitment to operate an electrical system that would provide reliable service, efficient operations and economically priced electricity. This approach would become a yardstick with which to measure the economy, efficiency and effectiveness of other utility operations in South Carolina.

By all standards, Santee Cooper has maintained that commitment, adding value in numerous ways to the state and its people. In doing so, it has stimulated electric growth and provided numerous services benefiting the people of the Palmetto State. Santee Cooper expanded beyond its original mission by responding to the growing, changing needs of this state.

Providing value is endless and ongoing. It began with the eradication of malaria when the project was built. It included the construction of a generating and transmission system that produced and delivered low-cost hydroelectric power to the darkened rural areas of South Carolina.

Decades later, it included building and operating a regional water system to serve the needs of more than 119,000 consumers in the Lowcountry. And it expanded greatly as Santee Cooper joined with the electric cooperatives to build and maintain a statewide transmission system, and to promote economic development that has attracted new industry and businesses, producing jobs and economic growth.

In partnership with Palmetto Economic Development Corp., Santee Cooper's economic development efforts in 2004 resulted in 36 new projects, $486 million of capital infrastructure, 4,842 new jobs and 53 additional megawatts of power demand.

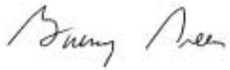
Santee Cooper's rates are among the lowest in the state, which through its electric cooperative partnership, benefits all customers, especially rural South Carolinians.

The company has not had a rate increase since 1996.

Santee Cooper receives no tax-appropriated funding from the state, yet adds value directly to the state treasury through an annual payment based upon 1 percent of its gross revenues. That projected payment for 2005 is $12.4 million.

Santee Cooper has contributed environmental value through its Give Oil For Energy Recovery, or GOFER program.

Guerry Green
Chairman — Board of Directors



In 2004, more than 1.94 million gallons of used motor oil were collected from every county in South Carolina and used to generate electricity.

As South Carolina's state-owned electric and water utility, Santee Cooper serves 143,000 residential and commercial customers in Berkeley, Georgetown and Horry counties and generates the power distributed by the state's 20 electric cooperatives to more than 640,000 customers in all 46 counties. All total, nearly 2 million South Carolinians receive their power directly or indirectly from Santee Cooper.

Responding to the needs of South Carolinians by providing value to our state will continue as Santee Cooper fulfills its commitment to deliver reliable, low-cost electricity, wholesale water and quality service for the people of South Carolina.

Santee Cooper POWER

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Cover: *Close up of a Santee Cooper residential AMR (automatic meter read) meter—with cover removed—to show its short antenna. The ERT module (electronic radio transmitter) sends kilowatt-hour consumption data to the wireless device used by Santee Cooper meter readers.*

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Santee Cooper's Presence in Anderson County adds to "Electric City" Legacy

Feb. 17, 1999 was a red-letter day for Santee Cooper… and for Anderson County.

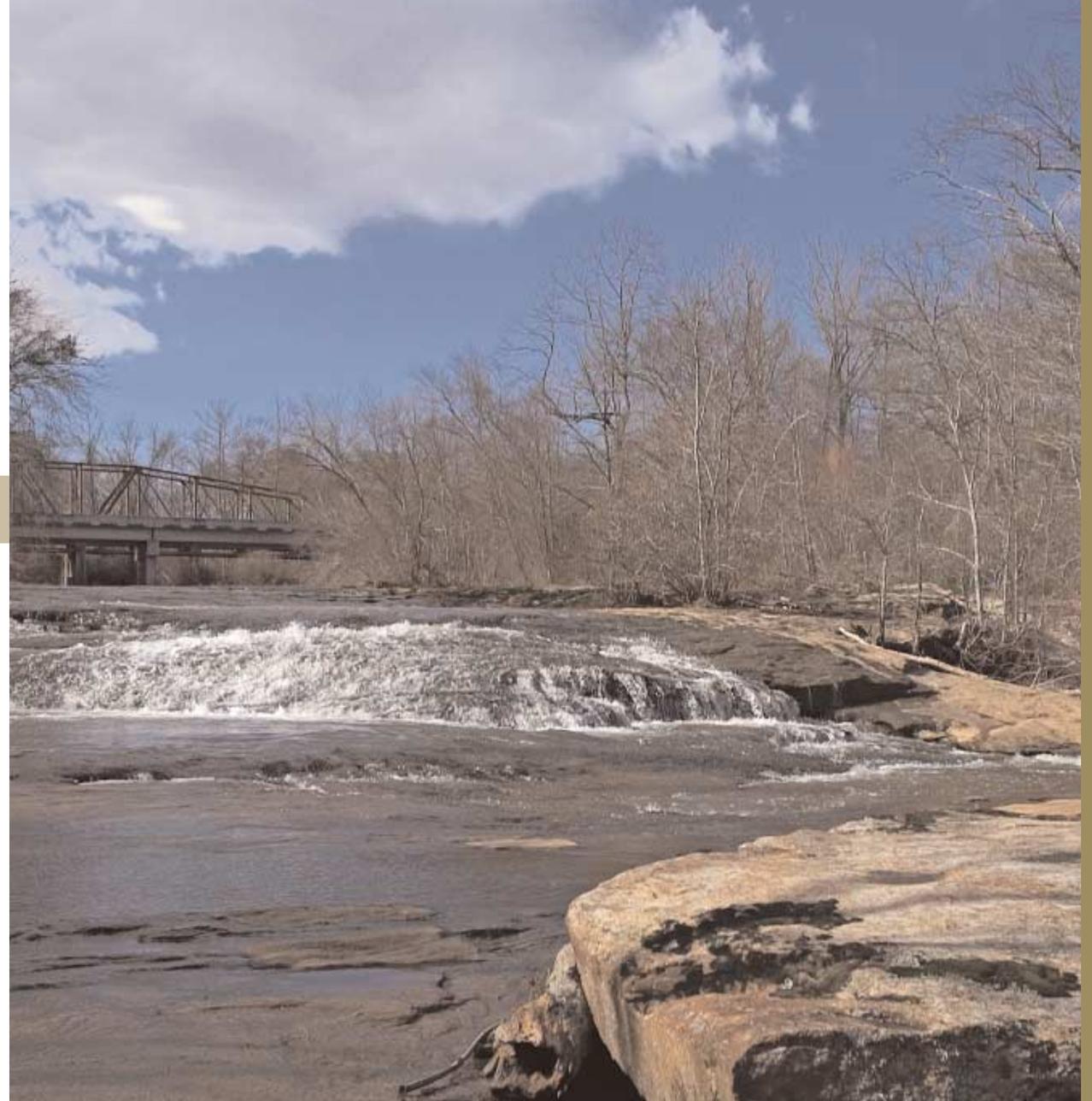
On that day, at a press conference at an Anderson hotel, the state-owned electric and water utility announced it had taken an option on 176 acres of land in the Starr and Iva communities.

The property was for a 508-megawatt generating station to be fueled by natural gas. Constructing natural gas generation was something new for Santee Cooper and it was the utility's first generating facility outside the Lowcountry and Pee Dee areas of South Carolina.

That plant, the John S. Rainey Generating Station, was dedicated in March 2004. Named for the Anderson native and former Santee Cooper board chairman, whose late father was a prominent local physician and whose mother was a noted philanthropist and historical preservationist, the station now has a generating capability of 1,080 MWs. Additional units were added since the first phase went into commercial operation in January 2002.

***Above**: John S. Rainey Generating Station near the Starr and Iva communities in Anderson County.*

***Right**: The surging waters at High Shoals on the Rocky River, provided the force for generating power that was delivered six miles to Anderson and forever changed the course of the South.*



Since 1999, Santee Cooper has invested over one-half billion dollars in Anderson County and the Upstate for plant construction and for a transmission line to take Santee Cooper power to its direct customers and the customers of the state's electric cooperatives. These 20 co-ops, located in every county in the state, depend on Santee Cooper-generated power for nearly 100 percent of their electrical needs.

Electricity in Anderson County Made History in Late 19th Century

Santee Cooper's investment in Anderson County is but one ingredient of an ongoing electrical timeline, part of the history of power production not only in South Carolina and the Southeast—but the entire nation.

Journeying back to Anderson in 1890, the population is about 2,000. That's when William Church Whitner organized and established two firms: the Anderson Water Supply Co. and the Anderson Light & Power Co. Whitner contracted with the city of Anderson to build a waterworks and erect streetlights. This was 11 years after Thomas Edison had perfected the incandescent light bulb, paving the way to light up America and the world.

The son of a prominent Anderson lawyer, Whitner forsook his father's wishes to join him in the legal profession. Whitner was interested in science and held two degrees from the University of South Carolina, including a degree in civil engineering. The mayor and Anderson City Council had approached Whitner in 1889 about the utilities project, which was completed on time.

***Top**: McFall's gristmill and water wheel on the Seneca River.*
***Abive**: Map of Anderson's electric power projects that made history in the late 1890s.*

Anderson could now boast it had 750 incandescent lamps, with the electricity generated using steam power. But Whitner had an intense desire to generate power more cheaply.

In 1891 he wrote, "I became convinced, on account of experiments that had been made in Europe in the development and transmission of electric power from waterfalls, that it would soon be possible to utilize some of the fine waterpower in the vicinity of Anderson."

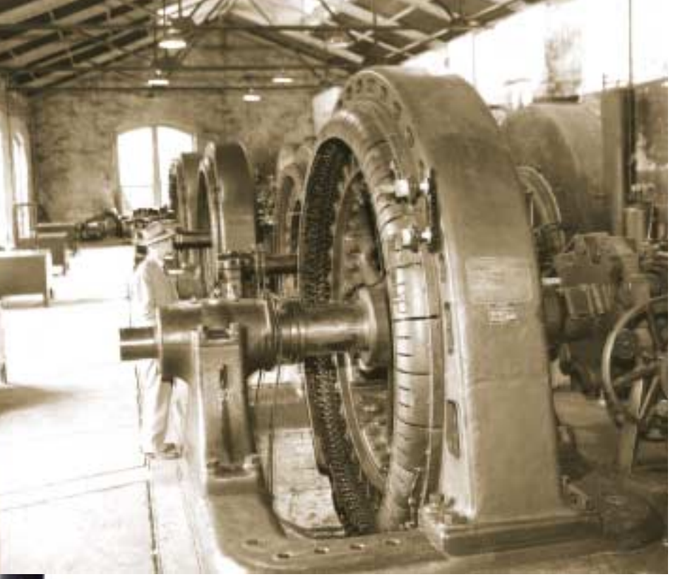
He journeyed to New York City that same year, interviewing Nicola Tesla, the Serbian immigrant who is famous for perfecting the alternating-current motor. Whitner leased property on the Rocky River in 1894. This was about six miles southeast of Anderson, part of McFall's Mill at High Shoals, and part of his Anderson Water, Light and Power Co. enterprise.

The idea was to transmit electricity over wires to consumers. Skeptics abounded, but with $25,000, some of it money from the city of Anderson, the project succeeded. The date was May 1, 1895 and a large contingent of dignitaries was present for the ceremonies. According to the book, "Six Miles That Changed the Course of the South—The Story of the Electric City Anderson, South Carolina" by Beth Ann Klosky:

A signal was given. A switch was thrown and the mill's large wheel, turning under the weight of water pouring over it from a big iron pipe, activated a small 'piggyback' wheel beside a 5,000-volt generator…With lightning speed, electric current surged over a two-phase, four-strand power line strung with No. 4 bare copper wires, and traveled a distance of six miles, from High Shoals on Rocky River, to the company's steam-power station on Tribble Street in the city of Anderson.

This was the first successful long-distance transmission of electricity in the South" and "opened the way for industrialization of the Southern states and heralded the rise of a New South." The News and Courier, Charleston's morning daily newspaper, dubbed Anderson, "The Electric City."

***Top**: Night skyline showing Anderson ablaze with electric light and a new lifestyle for Andersonians.*
***Above**: Portrait of William Church Whitner, on display in the Anderson County Museum.*



The High Shoals plant dramatically proved that alternating current could go long distances and to Whitner, demonstrating AC power was superior to direct current or DC. By the laws of physics, DC cannot be transmitted very far, a very practical shortcoming.

During this time, Edison himself touted DC current but was publicly opposed by fellow scientist and inventor George Westinghouse, who also became a household name in his own right. As we all know, AC won the day and certainly Whitner's work boosted AC's eventual dominance in the electric power industry.

Back in Anderson County, the High Shoals plant was trumped in history by Whitner's construction in 1897 of the Portman Shoals Power Plant, located about six miles northwest of Anderson on the Seneca River. These advances allowed Anderson to be among the few smaller cities in the Southern states to operate an electric streetcar system and an interurban electric railroad. Electric power advanced the evolution of cotton mills, which could now be powered by electricity. One example was the Anderson Cotton Mill, which in 1887 left steam power behind and embraced the new age of electric power.

***Top**: L.F. Cole, superintendent, shown inspecting generator in Portman Shoals power house.*

***Above**: Across from the courthouse square, downtown Anderson was electrified and bustling with business, circa 1910.*

***Left**: Motorman Harrison Calhoun Campbell piloting an electric-powered street car as it turns onto River Street on a wintry snowy day.*

***Below**: Bronze statue of Whitner on the courthouse plaza in downtown Anderson.*

Klosky wrote, "In 1913, the Anderson Light & Water Co. sold this plant (Portman Shoals) and all other holdings to Duke interests. In fact, the engineering ability of Anderson's pioneer leaders in hydroelectric power inspired the founding of the present Duke Power Co. The company relied heavily upon Anderson leaders in its founding years, to such extent that Anderson might be called Duke Power's birthplace."

On May 1, 1995, the centennial of the groundbreaking work by Whitner and his colleagues, Anderson civic leaders and dignitaries gathered to commemorate the momentous occasion. Today, reliable power is taken for granted. And while Edison, Westinghouse and Tesla certainly deserve their rightful place in history, South Carolinians have their own native son, William Whitner, who laid critical engineering groundwork to help vault Anderson, the state and the South into the 20th century.

Electric Light First Glowed for Andersonians back in 1880

The first glimmer of the electrical age dawned in Anderson on the afternoon of October 8, 1880, two years before Thomas Edison installed his first commercial electric lighting system and brought about a revolution in the pursuit of man-made illumination.

The "dawn" in Anderson didn't come with a flow of power from a generating plant. Instead, it occurred under the canvas big top of a traveling circus, advertised in The Anderson Intelligencer as John Robinson's Great World Exposition featuring a "New Electric Show, Animal Conservatory, Aquarium and STRICTLY MORAL CIRCUS."

The exposition rolled into town on a 50-car train for its one-day showing.

It provided the first electric light ever to glow in Anderson and fired the imagination of some of the town's most progressive citizens. John Robinson's glowing display was the Brush light, developed by Charles Francis Brush, a contemporary of Edison. Brush experimented with carbon sticks, inventing the electric-arc light in 1878. This was the light seen so brilliantly in Anderson more than 125 years ago.

To activate the electric light, John Robinson's Circus brought along an electric generator mounted on wheels and a steam engine to operate the generator. Posters and the advertisement published in the local newspaper proclaimed the exposition featured an electric light, "illuminating all surrounding objects with a soft, mellow, but surprisingly brilliant light equaling in intensity the noonday sun, A RADIUS OF HALF A LEAGUE."

Editor's Note: According to WordNet, a "LEAGUE" is defined as "an obsolete unit of distance of variable length (usually three miles)."

COMING IN SPECIAL TRAINS --- 50 CARS!

JOHN ROBINSON'S GREAT

WORLD'S EXPOSITION,

New Electric Light Show, Animal Conservatory, Aquarium and

STRICTLY MORAL CIRCUS,

Will Exhibit at ANDERSON, on FRIDAY OCTOBER 8th, 1880.

OUR ELECTRIC LIGHT.

This Magnificantly Appointed

MODEL MONSTER ENTERTAINMENT

INVITES criticism and challenges comparison. There is nothing half so varied and comprehensive on the road. Everything about it is SPIC-SPAN NEW. It is in no sense one of the old-time canvas shows of the past, but is organized on a SCALE OF IMMENSITY hitherto unparalleled. EVERY ACT and FEATURE A NOVELTY. The entire SERIES OF VAST PAVILIONS Brilliantly Illuminated with the new Brush Electric Light, in many repects preferable to the

EDISON ELECTRIC LIGHT!

Requiring a specially constructed steam engine of many horse-power, for the generation of Electricity, and many MILES OF INSULATED WIRE, illuminating all surrounding objects with a soft, mellow, but surpassingly brilliant light, equaling in intensity the noonday sun, a RADIUS OF HALF A LEAGUE. The engine used in connection with this light was constructed especially for this purpose by the Fitchburg Steam Engine Company, of Fitchburg, Mass.

Transmission Rights of Way: More than Pathways for Power

As the afterglow of sunset warms the sky, and a gentle breeze rustles the leaves, there's a slight movement in the dog fennel. A white-tailed deer carefully emerges from the shadows and begins to nibble on some briars. Nearby, a covey of quail finds shelter for the night.

This is a brief evening glimpse of one of Santee Cooper's transmission rights of way (ROW), a habitat for wildlife, an environment for biodiversity and a pathway for power.

Right of Way Management's history dates from the early 1940s when transmission lines were first installed. Back then, linemen first patrolled the rights of way. Now, Santee Cooper has employees whose sole responsibility is to manage the utility's rights of way.

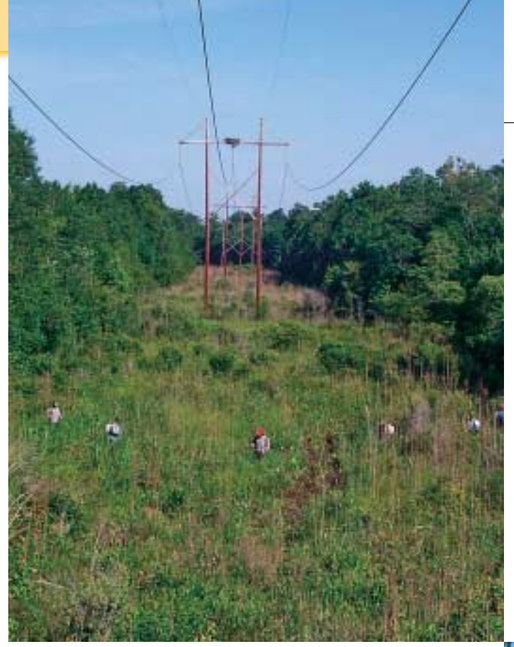
"My grandfather used to work at Santee Cooper and retired in Right of Way management," says Parker Hill, supervisor of Vegetation Management for the state-owned electric and water utility. "He first worked with the line crews and patrolled the rights of way. I believe he was a chief patrolman, so that must have been when the Right of Way department was first getting started. When I was a young boy, I remember seeing the chain saws and bush axes in the back of the old green truck he drove.

***Above**: Parker Hill, supervisor of Vegetation Management*
***Right**: Transmission line technicians Robert Bowers and Donald Cook patrol a section of Santee Cooper's more than 4,000 miles of transmission line rights of way to access needs for vegetation management.*

He told me how he and a dozen men would follow those lines and go into those bottoms to hand-cut and bulldoze the rights of way. They would be gone all week long."

Hill says his grandfather would appreciate the rights of way management techniques that Santee Cooper uses today. "We don't have the manpower now, but we manage more efficiently by removing plants that we do not want and promoting those that we do want," Hill says.

The responsibility of Right of Way Management is to manage vegetation on the power line rights of way as well as trees along the periphery, the ones that could fall on lines and cause an outage. The goal is to prevent outages and interference of line maintenance, resulting in a high reliability for Santee Cooper's transmission system. If the lines are safer and more accessible to the transmission crews, then maintenance is easier.



Santee Cooper's transmission lines are the superhighways that transmit electricity over long distances and range from 34,000 to 230,000 volts. ROW management operates strictly in the transmission corridors, which measure nearly 4,400 circuit miles. The total area is about 47,000 acres, but much of it comprises roadways, ponds, planted fields, pasturelands and parking lots. The actual managed rights of way totals about 35,000 acres. Due to transmission construction, the ROW acreage usually grows annually, increasing to an estimated 36,000 managed acres in 2005.

***Above**: Crews move down transmission right of way, hand spraying selected areas.*
***Left**: Vegetation that supports wildlife habitat is allowed to thrive in rights of way.*

It's All About Vegetation Management

"Santee Cooper uses a variety of resources to manage different types of vegetation on the rights of way, a program referred to as Integrated Vegetation Management or IVM," according to Superintendent of Right of Way Management Kenny Sott. "The IVM program consists of a balance of maintenance and management techniques including tree trimming, mowing and spraying."

Right of way management has evolved from more intensive manpower methods, using bush axes, chain saws and bulldozers, to today's modern management techniques that employ both specialized re-clearing equipment and selective herbicides. Crews clear dense brush using four-wheel drive mowing equipment and trim tree limbs nearly 60-foot high with the assistance of bucket truck-mounted apparatus. They also spray with a variety of specially formulated herbicides to manage vegetation growth beneath Santee Cooper's transmission power lines.

"All components of the IVM program compliment each other to effectively manage vegetation, which produces a reliable transmission system," says Hill.

***Above**: Mowers move along right of way removing trees and woody stemmed plants.*
***Top**: Butterfly is attracted to one of the many species of wildflowers that grow in rights of way.*

Adding Early Start to Control of Power-Line Pathways

Santee Cooper's selective, low-volume herbicide spray program began in 1996 to manage high-cost areas, which are more expensive to mow due to logistics such as travel time and narrow corridors.

"The initial costs associated with the spray program tend to be slightly higher due to the need to mow the area beforehand," explains Sott. "This allows for better identification and targeting of undesirable woody stemmed plants during the actual spray operation. Future selective spraying costs are lower because the targeted treatment of only undesirable woody vegetation while promoting native low-growing plants reduces the use of herbicides."

Wetlands and swamps, comprising nearly 3,400 acres of Santee Cooper's rights of way, are difficult for line crews to reach and in which to work. They are considered critical spray areas where it is important to reduce woody stemmed plants and maintain a community of low-growing, soft-stem plants such as rushes, grasses and cattails in these sections of the ROW corridor. This improves access and reduces the threat to power lines.

"The spray program promotes bio-diversity and reduces stem heights and densities," Sott says. "Undesirable species of rapidly growing woody plants such as sweet gum, pine, maple, oak, willow and poplar are reduced, while desirable species that include flowering, low-growing herbaceous plants such as broom sedge, dog fennel, golden rod and legumes are encouraged."

The results, Sott says, are herbaceous plants that have softer stems and are easier to push over and maneuver, allowing line crews to move up and down the rights of way more easily and through more favorable brush conditions.

Promoting Desirable Habitat

"The beauty of the program is that we are promoting native plants," adds Hill. "The less we disturb the site, the more the native species we promote take over. Then we don't have to maintain it as often. The result is wildlife habitat suitable for both foraging and nesting and very desirable for numerous species such as birds, small mammals and deer."

With the construction of new Santee Cooper transmission lines, ROW management tries to begin maintenance with spraying to take advantage of fewer, low-growing woody stems that are normally present, thus avoiding the initial cost of mowing. The results are lower costs, less chemicals and fewer stems requiring treatment.

"The safe use of chemicals is very important," explains Sott. "Numerous herbicide studies are performed to determine the safety and impact to the environment and to wildlife. All herbicides are approved by the Environmental Protection Agency and labeled for their specific use. They are also 'site specific' and only as strong as they need to be for a specific purpose."

***Left**: A helicopter flies along a transmission right of way trimming tree limbs that could fall into power lines.*

Rights of Way Relationships Also Maintained

As the rights of way cut across forests and preserves, these pathways for power help build relationships with private, state and federal property owners, and corporations and wildlife managers. "They also provide opportunities for landowners and property managers to participate in programs and projects that enhance their resources," says Sott.

For example, ROW management is presently engaged in a study with Coastal Carolina University regarding Venus fly trap plants on the rights of way located within the Lewis Ocean Bay Heritage Preserve in Horry County. The study examines the positive impact of Santee Cooper's maintenance routines on the growth of this rare species.

One of Santee Cooper's rights of way crosses the Francis Beidler Forest, an Audubon Wildlife sanctuary near Harleyville. In Horry County, the northern-most wood stork rookery in the United States is located on the Santee Cooper right of way. These open areas provide nesting and foraging habitat for many bird species.

In the "Power for Wildlife" program, landowners apply for grants to help maintain the rights of way. "If approved, Santee Cooper provides compensation for the landowner-performed maintenance based on program guidelines," says Jay Potter, coordinator of special ROW Management projects. "Enhanced wildlife habitat and reduced manageable acres are the result of this relationship."

"We measure the success of the ROW Management programs in a number of ways," says Sott. "For example, our mowing program is keeping the costs stable and maintaining an average 30-month maintenance rotation, while the spray program is improving the quality of vegetation and reducing our long-term maintenance costs."

"The ability to deliver reliable, low-cost power to customers is Santee Cooper's primary goal and that's why effective vegetation management is so valuable," Sott says. "Along with keeping vegetation properly maintained, Right of Way Management successfully manages the many unique ecosystems that our transmission system crosses. The ability to protect the transmission system from vegetation-related problems and at the same time enhance wildlife habitat is a winning combination."

***Above**: A well-maintained right of way with low-profile vegetative growth.*
***Right**: Some spectacular species, such as this thistle, thrive along Santee Cooper's pathways for power.*

Modern-Day Meter Reading Helps Hold Down Costs & Improve Customer Service

"The Chocolate Factory" episode No. 39 from the "I Love Lucy" television series is considered a comedy classic and one of television's most memorable moments. Lucy, dressed in a uniform and a tall chef-type hat, is instructed on how to wrap chocolate candies as they pass by on a conveyor belt. Excitement builds as the belt moves the chocolates faster and faster, and Lucy quickly gets behind in her job and begins cramming the tasty sweets in her mouth, down her dress and in her hat.

Many of us have felt the similar effects of our work getting ahead of us, minus the comical effects, of course. In the electric meter-reading business, the work can easily get ahead of you, but the addition of some new technology is helping to keep things moving.

***Above**: Customer Metering Supervisor Paul Mew downloads readings from an AMR device to send billing data to the computer.*
***Right**: Wireless AMR device records power consumption data with the push of a button.*

Basic Meter Reading

Reading electric meters is a fast-paced, physical job. The Santee Cooper meter reader begins the day early, around 6 a.m. In a typical day, an average of 535 residential and commercial meters must be read under all weather conditions. The meter reader travels the designated route in his or her truck but is required to move in and out of the vehicle frequently, stopping to walk among houses and businesses, through yards, and up and down elevators in the case of multi-family housing.

Though a standard residential meter has five dials, with each spinning in opposite directions, meter readers are trained to take their readings with a quick glance. In the early years of reading, books containing a page for each customer were bound together by geographic area and the readings were written down. At the office, each bill was hand calculated. In the 1970s, the data-processing age arrived, and meter readers were armed with punch cards and No. 2 pencils used to darken circles to correlate with the numeric readings.

The mid-1980s brought the most significant change with the introduction of a hand-held computer carried by each reader. The readings were taken and entered into the device using a keypad.

The meter reader begins the day with the device, downloaded with the customer information needed for a day's readings for a designated route. At each location, the customer's name, physical address and account number are displayed. The reading is entered and stored within the device until all the readings for a day are uploaded back at the office in Santee Cooper's Customer Information System.

The system uses the previous month's reading and the current reading to calculate the consumption. The bill is automatically printed in Moncks Corner the same day and mailed to the customer the next day. In past decades, it would take from three to five days from the time a meter was read until the bill was in the mail to customers.

***Above**: A modern solid-state residential customer AMR meter using an LCD display.*
***Left**: A mechanical meter of this type measured the flow of power in 1942 to Pittsburgh Metallurgical Company in North Charleston, Santee Cooper's first industrial customer.*

Automated Meter-Reading

Today, automated meter reading (AMR) has entered a new technological phase, making the reading/billing cycle faster and more accurate. That's because some meters can be read remotely. Meters equipped with a radio transmitter can be read from as far away as 1,000 feet. All the meter reader has to do is ride or walk by a meter or bank of meters, which allows the hand-held computer to receive the data transmitted from the meter. Meters can be read from the street, even from around buildings and through walls. Using AMRs in select locations means no more dodging dogs, hopping fences or dealing with locked gates to access meters.

Santee Cooper first began using AMRs in a 1998 pilot project to study if the new technology could make the labor-intensive work more efficient. "Innovation has long been a way of life at Santee Cooper," says Zack Dusenbury, vice president of Retail Operations. "Serving the customer is at the heart of what we do best at Santee Cooper, and we are always looking at ways to improve our service and accuracy. We measure our success by providing customers with the best possible service at the best price possible. Automated meter reading is another example of increasing efficiency while decreasing costs."

Customer growth, particularly in Horry and Georgetown counties, has made the AMRs a practical way of reading meters. "Our meter readers read about 11,000 meters during a month, a number much higher than the national average," says Paul Mew, Meter-Reading supervisor.

"The fast-growing Grand Strand area means our readers have a heavy work load," says Mew. "Our automated program allows Santee Cooper to retain our present number of readers even as growth along the Grand Strand continues." In 1995, Santee Cooper had 100,000 retail customers. Ten years later, that number has passed 143,000; more than a 40 percent increase. Even with the additional customers, no new meter readers have been added during that time.

***Above**: Electromechanical totalizer meter used with early Santee Cooper industrial customers employed its coils, gears and cams to add up the power consumption from two or more heavy-demand meters.*
***Left**: Meter reader Robert Quinn checks his reading in a Moncks Corner residential subdivision.*

Eyeballing Meters Still Important

"We could never replace a set of meter-reader eyes," says Ed Bodie, manager of Customer Services. "Meter readers are able to locate problems associated with a customer's meter service and even spot meter tampering, so their expertise in the field is critical. But we've found that the use of AMRs can cut meter-reading time in half. At the rate we are gaining new meters, we are able to keep up with the growth while maintaining our current staff."

The initial reason AMRs were added was that some meters were becoming difficult to access. In older neighborhoods, such as Ramsey Acres in Myrtle Beach, and also Moncks Corner, obstructions around meters such as fences, plantings and home additions were increasing the time it took for readers to make their rounds.

But now, approximately 3,500 electromechnical meters are annually being retrofitted to AMRs. In addition, many new single-family housing developments, such as the rapidly growing Carolina Forest area near Myrtle Beach, are equipped with AMRs.

"In areas where 300 to 400 new homes will be constructed, we use the AMRs," says Mew. He explains that such developments might take eight hours to read with the standard method and only about 30 minutes using AMRs. Mew says subdivisions and other areas are analyzed annually to determine which areas economically justify changing to the AMRs.

***Above**: Using a portable computer and wireless receiver, Meter Reader Dale Cox conducts the automatic reading of meters in a Myrtle Beach subdivision.*

***Right page**: Another AMR meter reading accomplished at about 15 mph.*

Technology is ever changing. Also new to AMRs in 2005 is the addition of the Mobile Data Collector. That is the latest piece of equipment being used to increase efficiency with the AMR meters. The collector is equipped with a dual-band receiver and has increased the ability to read AMR meters from a greater distance. Installed in the fleet, it is operated by the meter reader using a lap-top computer.

Productivity is increased even more with the use of a Global Positioning System (GPS), using MapQuest to help ensure that all meters have been read before leaving an area. The monitor lights up with red dots showing the exact location of each meter. As the readings are registered, the lights glow green. Any red dot remaining indicates that a reading was missed and the meter reader can identify the exact customer account, complete with name, account number and exact physical location via the MapQuest feature.

"In 2004 Santee Cooper meter readers read 1.6 million meters in our retail service area with only 713 errors, a 99.96 percent accuracy rating," says Bodie. "The revenues we collect come from all those meters spinning out there. Whatever we do to improve our meter-reading process will affect our bottom line, which translates to savings for our customers. We owe it to them to look at these modern meter-reading ways to run our business more efficiently and smarter."

Looking back at Lucy's chocolate-wrapping challenge, she might have gotten ahead of her production-line task had she just added a little more modern-day technology.

Robert M. Cooper—

From Fields and Forests to Corporate Boardrooms, the Gentleman Farmer from Wisacky Made his Mark on South Carolina

Robert Muldrow Cooper was a South Carolina Renaissance man.

Although he died 40 years ago, Cooper's legacy is one steeped in the Palmetto State's ages-old tie to the soil. His ideals and actions personified the pressing need to advance his native state beyond an agrarian economy.

Cooper spent most of the first half of the 20th century doing just that. When he passed away in 1966, at the age of 79, South Carolinians noticed. They should have. At the time of his passing Dr. Robert Edwards, then president of Clemson University stated:

"Clemson University and the state of South Carolina have suffered a grievous loss in the death of Mr. Robert M. Cooper, but the fruits of his dedication to the cause of higher education and his leadership in advancing that cause will live for countless generations to come."

Former Gov. Robert E. McNair has called Cooper "one of South Carolina's leading citizens of all time."

***Above**: Robert M. Cooper receiving a citation in Columbia for his lifetime of public service to South Carolina.*
***Right**: Robert M. Cooper, first chief executive of Santee Cooper.*

But the man's life had examples of paradox.

The library at Clemson University is named after him, and so is a 4-H camp and leadership center in Clarendon County operated by the university's extension service. Yet, he was a graduate of the University of South Carolina.

Members of Santee Cooper's original board of directors visited the construction site of the hydroelectric project.

While he loved the farm, his professional life took him far from the fields and forests of his native Lee County. He served in the state Legislature, as both a representative and a senator. Undoubtedly, Cooper could have easily spent a lifetime of public service in Columbia. But he had other callings.

Cooper, who had no prior experience as a power executive, became the first chief executive of state-owned Santee Cooper, now one of the nation's larger publicly owned electric and water utilities.

Cooper was instrumental in the formation of the State Development Board (today the S.C. Department of Commerce) and served as its first director. He was a tax collector, working the state for the Internal Revenue Service.

Quite diverse this man, so how should South Carolinians today view Cooper?

It doesn't take long to discover Robert M. Cooper was unique, elevating the term "public service" to a lofty height. In a way, he continues to serve as an ongoing example to those who served with him and to those who have followed in his footsteps.

"He was a very approachable man who had all the qualities of a leader," says Walter Cox, the 86-year-old former dean of students, president emeritus of Clemson University, and long-term Santee Cooper board member. "He was a natural politician and there was never a hint of scandal or anything inappropriate about how he conducted his life. He had charisma, was very approachable and was a good listener. And he loved Clemson. He was a Clemson trustee for 44 years."

Cooper's Early Life

Life for Cooper began on Feb. 25, 1887, in the tiny community of Wisacky, S.C. in Lee County. The son of Robert M. Cooper and Mary Nannette Shaw Cooper, he grew up on what biographers describe as a plantation. There is no doubt the Coopers and their five children were considered upstanding people in their community.

Cooper graduated Sumter High School in 1905 and four years later earned a bachelor's degree from USC. A biographical account described Cooper as a "planter." He loved Guernsey cows and planted a diversity of crops.

In 1912 he married Harvie Hull, a native of Savannah, Ga. It didn't take long for Cooper to get involved in politics. He was elected to the S.C. House of Representatives in 1918, serving until 1922 when he was elected to the state Senate.

As general manager, Robert M. Cooper was the chief executive officer during the construction of the Santee Cooper Hydroelectric and Navigation Project from 1939 to 1942.

In July 1933, Cooper resigned his Senate seat to accept an appointment as collector for the Internal Revenue Service. He lived in Columbia and served as president of the Columbia Chamber of Commerce and local Kiwanis club.

Collecting taxes must have been a tough job in the midst of the Great Depression. Unemployment was high in South Carolina. The farm economy had already been suffering a decade earlier from low cotton prices.

Santee Cooper's First Chief Executive

A new chapter in Cooper's life began on Oct. 17, 1938, when he accepted the position of general manager of Santee Cooper, as the utility's top chief executive. It was a heady time for the upstart electric utility.

Cooper came on board nearly five months after the U.S. Supreme Court declared the Santee Cooper Hydroelectric and Navigation Project could move forward.

Robert M. Cooper, third from left, with Santee Cooper's first board of directors.

For almost three long years, investor-owned utilities had legally challenged Santee Cooper's right to exist. With the law of the land now on its side, and a federal loan and grant in place, clearing for lakes Marion and Moultrie began in April 1939.

The $70 million land-clearing project was the largest in the country's history, eventually employing nearly 13,000 people over its 30-month construction period. During that time, the majority of labor came from the Works Progress Administration or WPA, the largest New Deal project east of the Mississippi River.

Interestingly, there is scant detail on Cooper's tenure at Santee Cooper, whose formal name is the S.C. Public Service Authority. Annual reports mention his name and position and that's about it. But Cooper served at the most critical

time during Santee Cooper's early days. These important dates and "firsts" included:

Jan. 25, 1939—*Loan and grant agreement ratified.*

April 13, 1939—*Santee Cooper acquires Federal Power Commission License and the rights and properties from the Columbia (S.C.) Railway and Navigation Co.*

April 18, 1939—*Clearing begins for dams and powerhouse site.*

Nov. 29, 1939—*First concrete poured for Pinopolis Power Plant (renamed Jefferies Hydroelectric Station in 1966).*

May 29, 1941—*Horry Division purchased.*

Nov. 12, 1941—*Impoundment of lakes begins after closure of last six gates at Santee Spillway.*

Feb. 17, 1942—*Santee Cooper first begins generating power from Unit 2 at Pinopolis Power Plant. Four other hydroelectric units begin commercial operation by the end of June.*

Dec. 2, 1942—*State flag raised over Pinopolis Power Plant and the Santee Cooper project is declared "substantially complete."*

While all this was going on in Cooper's life, World War II began for the United States, following the Dec. 7, 1941 attack by the Japanese at Pearl Harbor in Hawaii.

Earth moving was a major effort in clearing the 225-square mile area for two lakes and constructing 42 miles of earthen dams and dikes.

Santee Cooper's ninth annual report, covering the period from July 1, 1943 to June 30, 1944, has this entry in the publication's forward: "On Dec. 16, 1943, the Authority (Santee Cooper) received with regrets the resignation of General Manager R.M. Cooper and selected R.M. Jefferies, then general counsel, to serve as acting general manager. On Jan. 4, 1944, the office of general counsel was abolished and Mr. Jefferies was made general manager." Jefferies, a former state senator from Walterboro, headed Santee Cooper until he died in office in 1964.

Construction of Santee Cooper lakes was the nation's largest land-clearing project.

First Director of State Development Board

In 1945, Cooper became the first director of the Research, Planning and Development Board. This state agency, whose mission is to attract business to the state, preceded the State Development Board and today functions as the S.C. Department of Commerce.

Cooper and Jefferies were both interested having "the value of the water in the Cooper River between Charleston and the Santee (Cooper) project appraised for industrial use," he wrote in a 1947 letter to then Clemson University President R.F. Poole.

He indicated Jefferies also wanted "to have studies made of the waters in the reservoirs. From an industrial standpoint, this information is very essential."

This early interest and work eventually bore fruit. In the 1950s, the Bushy Park industrial corridor in Berkeley County developed with construction of such industries as Dupont, Agfa, Bayer and a generating station. The Santee Cooper Regional Water System, which Santee Cooper completed in 1994, is the source of water for four Lowcountry water utilities in Berkeley and Dorchester counties.

He stayed at the State Development Board until 1948, only to return from 1955 until 1959 and in 1965 was made a life member.

Old Carolina Man Loved Clemson

Cooper became a Clemson trustee way back in 1922 and in 1935, was named a life trustee in 1945. During his long service, Cooper saw the school's enrollment grow from just over 1,000 to over 5,000 at the time of his death.

4-H campers gather for daily flag-raising ceremony at Camp Bob Cooper during the early 1940s. The cabins in the background were former living quarters for federal Works Progress Administration work crews involved in the land-clearing operations for the Santee Cooper project. The long dining hall building had been the mess hall for the WPA crews. The flag-raising is still a twice-daily routine for leadership center participants at Camp Bob Cooper.

Cooper draws the full attention of a group he was addressing at a meeting in Columbia.

In 1955 Clemson shed itself of its military-style corps of cadets, and by 1958 women were admitted to the formerly all-male college. It was also the first institution of higher learning in South Carolina to admit a black student when in 1963, Harvey Gantt successfully and peacefully enrolled. In 1964, Clemson College became Clemson University and today has an enrollment of over 13,000 undergraduate and graduate students.

"I would say he was a 'moderate conservative,'" Cox says of Cooper's long history of service. "He realized Clemson had to change with the times and we did. It was a time of tremendous changes at Clemson through his decades of service."

The man from Lee County succumbed to heart disease at his Wisacky home and died on Feb. 11, 1966, having served as Clemson's board president since 1951.

The Greenville News editorialized, "When the history of the state's great industrial growth is written, no name will figure more prominently than Bob Cooper's." The newspaper further stated, "He had many friends inside and outside the state. To them, and to his family, his death is a personal loss. So is it also to those who may never have known him but live better lives because of his activities."

The Clemson board voted unanimously on March 9, 1966 to name the library at Clemson after him. On Oct. 14 of that year, the Robert Muldrow Cooper Library was dedicated.

No doubt, a persistent question Cooper fielded had to do with his college alma mater and his eventual devotion to South Carolina's land-grant institution. He even heard it from former U.S. Sen. Fritz Hollings, governor at the time, who asked, "How is it a man from Carolina can come up here and associate himself with Clemson?"

To which Cooper replied, "All right governor, have you ever seen a puppy dog that was born with his eyes open?"

Hollings replied to Cooper, "No, I haven't."

"Well," Cooper responded, "When mine got open I came to Clemson."

NEWSOURCE

Santee Cooper Supports North Eastern Strategic Alliance to Promote "Better Jobs, Better Salaries and a Phenomenal Place to Live"

Responding to the needs for improved economic growth and quality of life in the 10 counties making up the North Eastern Strategic Alliance, Santee Cooper has joined a growing list of Coastal and Pee Dee organizations in support of expansion for the $3-million development project.

In January, the Santee Cooper Board of Directors authorized the payment of $300,000 over three years to assist in funding of the project that will focus on the creation of a central hub of economic growth for the citizens of Chesterfield, Clarendon, Darlington, Dillon, Florence, Georgetown, Horry, Marion, Marlboro and Williamsburg counties.

Seven critical areas of the project focus on the areas of economic development marketing, construction of Interstate 73, creation of an international convention center in Myrtle Beach, development of an international airport at Myrtle Beach, enhancement of utility infrastructure, work force and education enhancements and preservation of the Darlington Raceway.

"Economic vitality is one of the primary forces behind every community's quality of life, and Santee Cooper is the only utility that serves every county in the NESA, either directly or through electric cooperatives," said Santee Cooper Board Chairman Guerry Green.

Green cites the economic challenges faced by the 10-county region:

• Average income in the region is 15 - 20 percent less than other regions of the state and 31 percent less than the national income average.

• Unemployment rates for this region are the highest in the South Carolina and well above national rates. The decline of agricultural production has coupled with the continuous downsizing of the textile and apparel industries.

• Per capita investing in the region during the 1998-2002 period was only 55 percent of investment in the Central Carolina region and only 35 percent of the investment in the Upstate region for the same period.

• Economic development support for the state of South Carolina has consistently declined over the last four years.

Green says that, though disturbing, these facts also present an incredible opportunity for change. "In essence, the leaders of this region have two choices: One option is to become resigned to a perpetually lagging position within South Carolina and the Southeast, with people struggling and potential only partially tapped.

The other option is to face those obstacles that have held us back and take concerted, coordinated action to overcome each challenge. By choosing the second option, we can help the people of these communities prosper, fueled by dynamic growth and unremitting commitment."

The North Eastern Strategic Alliance was formed in 2001 in an effort to develop such a product and approach. Given the severely limited resources currently available to NESA, its accomplishments in the seven areas of focus have been remarkable, according to Douglas P. Wendel, NESA Campaign chair.

"Advancements in each of the areas will support advancement in each of the others," Wendel said. "Conversely, however, without forward movement in all of these areas, desperately needed economic development for this region will be difficult to achieve and even more difficult to sustain."

"It's plain and simple," says Santee Cooper's President and Chief Executive Officer Lonnie Carter. "The energy of this region emerges from opportunity and growth and from common commitment to an important goal. Support by Santee Cooper helps make a difference in the communities it serves in this section of the state, and it provides another opportunity for providing value to the state."

What does it take to open the doors of a new business location? It takes a powerful combination of a pro-active business climate and incentives, a heritage of hard work and reliable, low-cost energy needed to generate growth. In South Carolina, that power comes from Santee Cooper, the nation's fourth largest publicly owned electric utility. We provide dependable power at some of the lowest rates in the nation, fresh water, great sites and all the other relocation resources you need. For information and listings of available sites, call 1-800-833-7797. Or log onto www.scprimesite.com.

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